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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,449	08/14/2001	Mitsuru Kondo	2001-1086A	8131

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EXAMINER

MARTIR, LILYBETT

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 04/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,449

Applicant(s)

KONDO ET AL.

Examiner

Lilybett Martir

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-5 and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In claims 4 and 5, the recitation of the terms "in a turned V shape" makes said claims ambiguous and indefinite, since it is not comprehensible to what kind of shape is the applicant referring to from the disclosed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda et al. (JP63313007). Matsuda et al. Teaches the claimed invention, including:

- A reference mark and a measuring mark as in elements 2 and 3 provided on a rotational surface of said rotary shaft as in element 1, said measuring mark being arranged inclined relative to an axial direction of said rotary shaft as noted in element 2 in Figure 1; a sensor as in elements 4 and 5 arranged fixedly so as to oppose a surface of said

rotary shaft, said sensor generating pulses upon passing of said marks following a rotation of said rotary shaft (see abstract); and data processing part as in elements 6 and 7 for measuring the axial elongation of said rotary shaft from a change in an interval of the pulses generated by said sensor upon passing of said reference mark and measuring mark, as in claim 2.

- Said reference marks as in elements 2 and 3 being two marks provided such that an interval between them in a circumferential direction of said rotary shaft differs according to an axial directional position of said rotary shaft as inherently shown in Figure 1, as in claim 3.
- Regarding claim 1, said claim is a method claim that exists as an essential constituent of the claimed invention, and therefore said claim is said to be inherently disclosed in the teachings of Matsuda et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. in view of Hochstein (Pat. 4,712,432). Matsuda et al. Teaches the claimed invention, except for:

- Said marks being two grooves provided in a "V" shape, as in claim 4.
- Said measuring mark being a groove provided in a spiral shape, as in claim 6.

Hochstein et al. teaches a shaft as in element 34 that has a pair of slots or grooves as in elements 38 and 40 oriented in a "V" shape as noted in Figure 3.

Since a change in the shape of a known element in a known apparatus merely constitutes obvious design choice, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the axial elongation measuring apparatus of Matsuda et al. using the teachings of Hochstein et al. by modifying the shape of the makings or grooves making them in the shape of a "V" or having a spiral shape for the purpose of experimentally determining a shape of said grooves that would allow said measurements to be made therefore making said apparatus versatile and reliable.

Claims 5, 7, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. in view of Savage et al. (Pat. 5,315,881). Matsuda et al. teaches the claimed invention, except for:

- Said two marks being two wire members fitted in a turned "V" shape, as in claim 5.
- Said measuring mark being a wire member fitted in a spiral shape, as in claim 7.
- Said sensor being an eddy current gap sensor, as in claims 11 and 13.

Savage et al. teaches a sensor that is comprised by a shaft as in element 12 that has a pair of wires as in elements 20 fitted onto said shaft in a spiral shape, as noted in Figure 1.

Since a change in the shape of a known element in a known apparatus merely constitutes obvious design choice, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the axial elongation measuring apparatus of Matsuda et al. using the teachings of Savage et al. by modifying the shape of the makings or wires making them in the shape of a "V" or having a spiral shape for the purpose of experimentally determining a shape of said wires that would allow said measurements to be made therefore making said apparatus versatile and reliable. It would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the axial elongation measuring apparatus of Matsuda et al. using the teachings of Savage et al. by utilizing an induced current sensor to measure the variations in the magnetic field produced by the rotating shaft for the purpose of providing said measuring device with a sensor that is well known in the art and that would allow the necessary measurements to be obtained therefore making a measuring device that is versatile and reliable.

Claims 8-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al. in view of Karim-Panahi et al. (Pat. 5,438,882). Matsuda et al. teaches the claimed invention, except for:

- A sensor that is a photoelectric sensor, as in claims 8-10 and 12.

Karim-Panahi et al. teaches a rotating shaft sensor that comprises two photodetecting sensors as in elements 8 and 8' that produce variations in the phase difference of pulse trains.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the axial elongation measuring apparatus of Matsuda et al. using the teachings of the sensor of Karim-Panahi et al. by providing said measuring apparatus with photoelectric sensors for the purpose of providing said measuring device with a sensor that is well known in the art and that would allow the necessary measurements to be obtained therefore making a measuring device that is versatile and reliable.

Citation of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art considered pertinent during examination of the examined application is:

- Discenzo (Pat. 5,723,794) Photoelastic neural torque sensor.
- Lapeyre (Pat. 4,166,383) Optical shaft torque meter.

Art Unit: 2855

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (703)305-6900. The examiner can normally be reached on 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703)308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3432 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LM

Lilybett Martir
Examiner
Art Unit 2855

RCM

April 11, 2002



Benjamin R. Fuller
Supervisory Patent Examiner
Technology Center 2800